

What is claimed is:

1 1. A method of manufacturing a semiconductor device
2 comprising a process for forming a seed layer in a via hole
3 or a wiring-trench formed in an interlayer insulating film
4 formed on a semiconductor substrate, and then burying a wiring
5 material using an electroplating method, wherein the current
6 step of said plating method has only one step for flowing a
7 current in the direction opposite to the direction for growing
8 the plating.

1 2. The method of manufacturing a semiconductor device
2 according to claim 1, wherein said current step comprises three
3 steps: a first step for flowing a current only in the direction
4 for growing the plating; a second step for flowing a current
5 only in the direction opposite to the direction for growing
6 the plating; and a third current step for flowing only in the
7 direction identical to said first step; in the order of said
8 first, second, and third steps.

1 3. The method of manufacturing a semiconductor device
2 according to claim 1, wherein said step flowing a current only
3 in the direction opposite to the direction for growing the
4 plating is configured so that the absolute value of the product
5 of the current and the time is within a range between 1.0 and
6 $120 \text{ mA} \times \text{sec/cm}^2$.

1 4. The method of manufacturing a semiconductor device
2 according to claim 2, wherein said second current step is
3 configured so that the absolute value of the product of the
4 current and the time is within a range between 1.0 and 120
5 mA \times sec/cm².

1 5. The method of manufacturing a semiconductor device
2 according to claim 2, wherein said first current step is
3 configured so that the product of the current and the time
4 is within a range between 120 and 2700 mA \times sec/cm².

1 6. The method of manufacturing a semiconductor device
2 according to claim 4, wherein said first current step is
3 configured so that the product of the current and the time
4 is within a range between 120 and 2700 mA \times sec/cm².

1 7. The method of manufacturing a semiconductor device
2 according to claim 2, wherein the current value of said first
3 current step is within a range between 0.5 and 13 mA/cm².

1 8. The method of manufacturing a semiconductor device
2 according to claim 4, wherein the current value of said first
3 current step is within a range between 0.5 and 13 mA/cm².

1 9. The method of manufacturing a semiconductor device
2 according to claim 2, wherein the current value of said third
3 current step is within a range between 16 and 90 mA/cm².

1 10. The method of manufacturing a semiconductor device
2 according to claim 4, wherein the current value of said third
3 current step is within a range between 16 and 90 mA/cm².

1 11. The method of manufacturing a semiconductor device
2 according to claim 6, wherein the current value of said third
3 current step is within a range between 16 and 90 mA/cm².

1 12. The method of manufacturing a semiconductor device
2 according to claim 1, wherein said wiring material is copper.